

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2004/050814

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 H01L23/528 H01L23/522

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	PATENT ABSTRACTS OF JAPAN vol. 008, no. 135 (E-252), 22 June 1984 (1984-06-22) -& JP 59 046044 A (NIPPON DENKI KK), 15 March 1984 (1984-03-15) abstract	1-9
Y	PATENT ABSTRACTS OF JAPAN vol. 1995, no. 03, 28 April 1995 (1995-04-28) -& JP 06 334157 A (SONY CORP), 2 December 1994 (1994-12-02) abstract ----- -/--	1-9

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

*& document member of the same patent family

Date of the actual completion of the international search

16 August 2004

Date of mailing of the international search report

23/08/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax (+31-70) 340-3016

Authorized officer

Edmeades, M

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2004/050814

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	PATENT ABSTRACTS OF JAPAN vol. 017, no. 035 (E-1310), 22 January 1993 (1993-01-22) -& JP 04 255246 A (TOSHIBA CORP), 10 September 1992 (1992-09-10) abstract	1
A	----- EP 1 231 638 A (TOSHIBA ELECTRONICS EUROP GMBH) 14 August 2002 (2002-08-14) figure 1	1,4
A	----- US 6 346 721 B1 (SCHULTZ RICHARD T) 12 February 2002 (2002-02-12) column 3, line 54 - column 4, line 51; figure 3 -----	1,4

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB2004/050814

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 59046044	A	15-03-1984	NONE
JP 06334157	A	02-12-1994	NONE
JP 04255246	A	10-09-1992	JP 4255246 T1 10-09-1992
EP 1231638	A	14-08-2002	EP 1231638 A1 14-08-2002
US 6346721	B1	12-02-2002	NONE